

DETAILED ACTION

1. This Office action is in response to the applicant's communication filed on 1/25/10.

Claim Objections

2. Claims 1 and 18 are objected to because of the following informalities:
3. In claim 1, In line 14, "...the radius of curvature of said second..." should read "...a radius of curvature of said second..."
4. In claim 18, In lines 11-12, "...the radius of curvature of said second..." should read "...a radius of curvature of said second..."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-9, 11, 12, 16-20, 23-27 and 31-33 are rejected under 35 U.S.C. 103(a) as being obvious over US 4,024,868 to Williams in view of US 4,192,315 to Hilzinger et al.

Claims 1, 11, 18, 19, 31: Williams discloses a surgical clip comprising an elongate upper and lower jaws attached together at a hinge (see Fig. 1), the lower jaw being provided with a latching means 26 at an opposite end of the hinge; the upper jaw comprising an arcuate shaped section having a first and second arcuate shaped portions, the first arcuate shaped portion 20 being adjacent to the hinge, the second arcuate shaped portion 22 being adjacent to the first arcuate shaped portion 20; the elongated upper and lower jaws having respective facing surfaces, the first arcuate shaped portion 20 being contiguous with the second arcuate shaped portion 22 (see Fig. 1); the first arcuate shaped portion 20 having a first radius of curvature in its facing surface that has a greater radius of curvature than a second radius of curvature of the second arcuate shaped portion in its facing surface (see Fig. 1); wherein the first and

second arcuate shaped portions are both defined in the facing surface of the upper jaw, and wherein the first radius of curvature and the second radius of curvature are both defined by respective centers of curvature located below the upper jaw (see Fig. 1).

Williams is silent with regards to a straight section located between the hinge and the first arcuate shaped portion.

However, having a straight section adjacent the hinge and the first arcuate shaped portion is well known in the art. For example, Hilzinger discloses a clip having an upper and lower elongated jaw connected at a spring hinge 16, wherein a straight section is disposed between said hinge and where reference number 13 or 14 is pointing towards (which is an arcuate section). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the spring hinge of Hilzinger to the device of Williams since the spring hinge would provide more or better tensional force to the device. The addition of the spring hinge would also include the straight section between the hinge and the arcuate portions. Further note that the first and second arcuate shaped portions will have a length that is longer than the straight section (as modified with Hilzinger).

Claims 2, 4 and 7-9: Williams discloses a second straight section adjacent the second arcuate shaped portion 22 (see Fig. 1) that interlocks with the latching means and has a free end. Note that the claims do not specify which direction is distally. Thus, distally could be viewed as the left side of the device as shown in Fig.1. The upper jaw is also fully capable of being bend/distorted.

Claim 3: Williams is silent with regards to the first radius of curvature being 3 times that of the second radius of curvature. However, it would have been obvious to one of ordinary skill in the art to arrive at the recited ratio since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 5, 6 and 23-26: Williams discloses the first and second arcuate shaped portion and the straight section to be formed from the same wire element, which would have the same width. The modified device of Williams will also have the straight section extend to the hinge.

Claims 12 and 20: There is a lack of a straight portion between the first and second arcuate shaped portions.

Claim 16: The first and second arcuate shaped portions of Williams forms a complex contiguous curved shape.

Claim 17: The second arcuate shaped portion has an arcuate surface on both an outer and inner surface thereof (see Fig. 1).

Claim 27: The straight section has an inner and outer surface that is substantially flat (see Fig. 1).

Claims 32 and 33: The length of the first arcuate section is longer than the length of the second arcuate section.

9. Claims 10, 14, 15, 21 and 22 are rejected under 35 U.S.C. 103(a) as being obvious over Williams in view of Hilzinger et al., as applied to the rejections above, and in further view of US 5,569,274 to Rapacki et al.

Claims 10, 21 and 22: The modified device of Williams discloses all the limitations of the claims except for a silicone rubber sleeve. However, the use of silicone rubber sleeves on surgical clips are well known in the art, as seen in Figs. 73 and 75 of Rapacki. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use silicone rubber sleeves in the device of Williams because it would prevent damaging the vessels by providing a softer contact surface.

Claims 14 and 15, the modified device of Williams discloses all the limitations of the claims except for the use of a tubular storage member/applicator. However, the use of a tubular storage member/applicator for deploying a surgical clip is well known in the art, as shown in Figs. 2A-2B of Rapacki. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the applicator of Rapacki with the clip of Williams as it allows the surgeon to deliver the clip remotely inside the patient. The tubular member is fully capable of having a dimension that is smaller than a dimension of a captive opening.

10. Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over US 4,024,868 to Williams in view of US 4,112,951 to Hulka et al.

Williams discloses a surgical clip comprising an elongate upper and lower jaws attached together at a hinge (see Fig. 1), the lower jaw being provided with a latching means 26 at an opposite end of the hinge; the upper jaw comprising an arcuate shaped section having a first and second arcuate shaped portions, the first arcuate shaped portion 20 being adjacent to the hinge, the second arcuate shaped portion 22 being

adjacent to the first arcuate shaped portion 20; the elongated upper and lower jaws having respective facing surfaces, the first arcuate shaped portion 20 being contiguous with the second arcuate shaped portion 22 (see Fig. 1); the first arcuate shaped portion 20 having a first radius of curvature in its facing surface that has a greater radius of curvature than a second radius of curvature of the second arcuate shaped portion in its facing surface (see Fig. 1); wherein the first and second arcuate shaped portions are both defined in the facing surface of the upper jaw, and wherein the first radius of curvature and the second radius of curvature are both defined by respective centers of curvature located below the upper jaw (see Fig. 1).

Williams is silent with regards to a straight section located between the hinge and the first arcuate shaped portion, wherein the hinge comprises a hinge pin.

However, having a straight section adjacent the hinge comprising a hinge pin, is well known in the art. For example, Hulka discloses a surgical clip having a hinge with a hinge pin and a straight section extending from the hinge. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a hinge with a hinge pin to the device of Williams as it would allow the clip to open wider for receiving tissues.

Response to Arguments

11. Applicant's arguments with respect to claims 1-27 and 31-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darwin P. Erezo whose telephone number is (571)272-4695. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jackie Ho can be reached on (571) 272-4696. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Darwin P. Erezol/
Primary Examiner, Art Unit 3773